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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/797,579

03/11/2004

Eun-sung Lee

Q80074

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23373

7590

04/19/2006

EXAMINER

TADESSE, YEWEBDAR T

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SUITE 800
WASHINGTON, DC 20037

ART UNIT

PAPER NUMBER

1734

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/797,579

Applicant(s)

LEE ET AL.

Examiner

Yewebdar T. Tadesse

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-2, 6-7 and 9-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2, 6-7 and 9-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-2 and 9-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Pancham et al (US 2005/0072525).

As to claims 1 and 10, Pancham et al discloses (see Figs 2A and 3-4; and paragraph 34) a spin coating apparatus for coating photoresist, comprising: a spin chuck (304) comprising a mount part (support member 402), for mounting a wafer thereon, and an extended projection part (upstanding member 401) capable of facilitating formation of an edge-bead thereon; and a nozzle (223) for depositing photoresist onto a wafer mounted on the mount part of the spin chuck, wherein the extended projection part of the spin chuck surrounds the entire circumference of the

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wafer (perimeter of the substrate 250) while be in contact with the circumference of the wafer mounted on the mount part.

With respect to claim 2, Pancham et al discloses (see Figs 2A and 3-4; and paragraph 34) a spin coating apparatus for coating photoresist, comprising: a spin chuck (304) comprising a mount part, for mounting a wafer thereon, and an extended projection part (upstanding member 401) capable of facilitating formation of an edge-bead thereon; and a nozzle (223) for depositing photoresist onto a wafer mounted on the mount part of the spin chuck; wherein the extended projection part of the spin chuck has a height lower than of the wafer mounted on the mount part (see Fig 4).

As to claim 9, in Pancham (see Fig 4) et al the extended projection part of the spin chuck is physically attached to the mount part of the spin chuck.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. Claims 6 and 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pancham et al (US 2005/0072525) as applied to claim 1 above and further in view of Emami et al (US 2003/0070695).

As to claims 6 and 12, Pancham et al lacks teaching a gas exhaust disposed so that gas is exhausted from an edge of the wafer in turning direction of the wafer and a centrifugal direction upon rotation of the wafer. Emami discloses (see Fig 4) a gas exhaust disposed above the wafer so that gas is exhausted from an edge of the wafer in turning direction of the wafer and a centrifugal direction upon rotation of the wafer. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a gas exhaust as claimed in Pancham et al to remove the edge bead (see Abstract).

7. Claims 7, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pancham et al (US 2005/0072525) in view of Emami et al (US 2003/0070695).

With respect to claims 7 and 13, Pancham et al is cited for the same reasons described above (see paragraph 3). Pancham et al lacks teaching a gas exhaust disposed so that gas is exhausted from an edge of the wafer in turning direction of the wafer and a centrifugal direction upon rotation of the wafer. Emami discloses (see Fig 4) a gas exhaust disposed above the wafer so that gas is exhausted from an edge of the wafer in turning direction of the wafer and a centrifugal direction upon rotation of the wafer. It would have been obvious to one of ordinary skill in the art at the time the

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invention was made to include a gas exhaust as claimed in Pancham et al to remove the edge bead (see Abstract).

With respect to claim 11, Pancham et al discloses (see Figs 2A and 3-4; and paragraph 34) a spin coating apparatus for coating photoresist, comprising: a spin chuck (304) comprising a mount part (support member 402), for mounting a wafer thereon, and an extended projection part (upstanding member 401) capable of facilitating formation of an edge-bead thereon; and a nozzle (223) for depositing photoresist onto a wafer mounted on the mount part of the spin chuck, wherein the spin chuck further comprises a separation part (lift pin assembly 218) for separating the wafer from the spin chuck. Pancham et al discloses a separation part comprising a removable pin. However Pancham et al lacks showing a separation part comprising removable plugs. Emami et al discloses (see Fig 3) a separation part comprising removable lift pins (see paragraph 28). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include additional removable lift pin in Pancham et al to carry the substrate from both directions in lifting the substrate off the mount part or support.

Response to Arguments

8. Applicant's arguments with respect to have been considered but are moot in view of the new ground(s) of rejection.

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9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

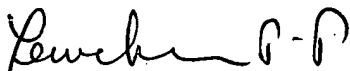
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yewebdar T. Tadesse whose telephone number is (571) 272-1238. The examiner can normally be reached on Monday-Friday 8:00 AM-4: 30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


YTT


CURTIS L. HAYES
PRIMARY EXAMINER